

# SMD 853d 3-in-1 Rework Station

Instruction  
Manual



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# Features

## Overview

- This product's design is based on the need for a 3 in 1 work station. It combines a soldering station, a hot air rework, and a DC power supply. These functions can be used independently or simultaneously. This design occupies less area and is energy efficient.
- The product uses a double-sided fiberglass circuit board. The components are installed in a particular order to eliminate noise from the DC voltage signal.
- There are components in the work station that can detect a fault (short circuit, open circuit, overload, etc.) and prevent damage to the work station.

## Soldering Iron and Hot Air Rework Station

- The soldering iron, hot air rework station and DC power supply use independent dual-core microcontrollers to allow for each function to work independently. A dual-core CPU is used to avoid failure on one feature when another feature is not functioning properly.
- An Intelligent Fuzzy logic PID controller monitors the temperature of the soldering iron and the hot air rework station. This temperature is displayed on the LED digital display. There are components to the device that help maintain temperature stability.
- The hot air rework station uses high quality heating elements which provide double the power efficiency in comparison to a normal station. This extends the life of the heating elements.
- The hot air rework station has two options for the type of fan used: a brushless fan gentle wind and a diaphragm pump spiral wind.
- The soldering iron has an anti-static design and RF protection to prevent electrostatic damage to the SMD components.



*Hot Air Rework Station*



*Soldering Iron*

# Specifications

Model	853D/909D Series	853DA/909DA Series
Power Consumption	$\leq 800$ W	$\leq 800$ W
Measurement	25X185X175MM	25X185X175MM
Weight	3.95 kg	4.18 kg
Working Temperature	0 - 50 °C	0 - 50 °C
Storage Temperature	-20 - 80 °C	-20 - 80 °C

Hot Air Rework Station		
Airflow Type	Brushless Fan Gentle	Diaphragm Pump Spiral
Air Flow	$\leq 120$ L/min	$\leq 24$ L/min
Temperature Range	100 - 480 °C	100 - 480 °C
Temperature Stability	$\pm 1$ °C	$\pm 1$ °C
Display Type	LED Digital Display	LED Digital Display

Soldering Iron		
Temperature Range	200 - 480 °C	200 - 480 °C
Temperature Stability	$\pm 2$ °C	$\pm 2$ °C
Tip of Ground Voltage	$< 2$ mV	$< 2$ mV
Tip Ground Impedance	$< 2$ Ohm	$< 2$ Ohm

DC Power Supply		
Output Voltage	DC 0V - 15V	DC 0V - 15V
Load Stability	$< 0.01 \pm 2\text{mV}$	$< 0.01 \pm 2\text{mV}$
Temperature Coefficient	$< 300 \text{ ppm}/^\circ\text{C}$	$< 300 \text{ ppm}/^\circ\text{C}$
Ripple dB	$< 1 \text{ mvrms}$ (virtual value)	$< 1 \text{ mvrms}$ (virtual value)
Protection	1A - 3A (optional)	1A - 3A(optional)

## General Use

- The station is suitable for various kinds of soldering and disordering various kinds of electronic components such as SOIC, CHIP, QFP, PLCC, BGA, SMD, etc.
- The hot air rework station can be used for shrinking, paint drying, adhesive removal, thawing, warming, and plastic welding.
- The station can be used for mobile phone repair. It provides a power supply which is useful for circuit board testing, detecting a mobile radio signal's strength, etc.

## Operating Instructions

### Hot Air Rework Station

1. In order for the hot air gun to work properly, the handle of the air gun must be removed from the handle rack.
2. Connect the station to the power supply and press the on/off switch for the hot air rework station.
3. Press the “▲” button or the”▼” button to set the temperature of the hot air rework station. The digital LED display will show the current operating temperature of the work station.
4. When finished using the work station, put the handle of the hot air gun in the handle rack. The station will automatically begin cooling the hot air gun.

### Soldering Iron

1. Put the soldering iron handle on the iron frame.
2. Press the on/off switch of the station and press the “▲” button or the”▼” button to set the temperature of the soldering iron. The digital LED display will show the current operating temperature of the soldering iron.

## DC Power Supply Operation

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1. Press the on/off switch of the DC power supply.
2. Turn the knob until the digital LED display reads the desired voltage value. If the load current exceeds the rated current, the station will automatically disable the DC power supply.

## Parts Replacement Instructions

### Replacement of the Hot Air Rework Heating Element

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1. Once the hot rework station is fully cooled, loosen the screws on the handle.
2. Turn the handle counterclockwise until it comes off and then remove the cover of the handle.
3. Gently remove the fan and loosen the three screws to remove the fixed wiring board.
4. Separate the wiring board from the heater wiring board connection cable. Pay attention to the connection locations.
5. Remove the heat pipe body wrap with mica paper. Be careful not to break the steel ground wire.
6. Wrap the heater well with new mica paper. Insert the heater in the tube and install in back into place.
7. Put all other parts back into place.

### Replacement of the Soldering Iron's Tips and Soldering Iron's Heating Core Element

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1. Unscrew nut No.1 and then remove the steel tube No. 2. Remove the tip.
2. To replace the heating core element NO. 6 and the plastic cap NO 4, gently pull out the heating core element NO. 6 and the circuit board NO. 7. Remember the connection of spring NO. 5.
3. The iron core from the circuit board welding allows the heating core to fit well. Note the order of the iron core wire connection.



To avoid serious injury and fire accidents, strictly adhere to the following:

- When repairing or installing parts, the power supply must be off.
- When the work station is on, DO NOT touch the metal parts of the hot air rework station or the soldering iron. To replace the nozzles or tips, the power supply should be off and the metal parts should be cooled to room temperature.
- DO NOT use the machine near flammable things.

Handle cover

Heating element

Mica paper

Component handle

